MTCA Science Advisory Board

January 29, 1999
9:00 am – 4:30 pm
Park Place Building
1200 6th Avenue, 15th Floor
Seattle, WA

DRAFT Meeting Summary

Meeting Objectives:
To advise the Department regarding validity of scientific methodology as proposed in draft MTCA rule language.

Meeting Summary: This summary records key discussions and decisions made during the January 29, 1999 MTCA Science Advisory Board Meeting.

SAB Members Present: Hank Landau, Chair; Richelle Allen-King; Bruce Duncan; Julie Wilson (by phone); Marjorie Norman (excused absence).

Ecology Staff: Pete Kmet, Dawn Hooper, Curtis Dahlgren, Steve Robb, Nigel Blakley, Craig McCormack, Lynn Coleman

Opening Remarks Hank Landau

- Hank Landau recently circulated a survey to help access how well the SAB is operating. He asked each of the Board members to respond to the survey as soon as possible.
- Hank prompted Board members to participate in creating a coordinated proposed rule amendment response from the SAB to Ecology.
- Hank encouraged the public to send any written comments regarding SAB issues directly to Ecology, who will then provide the comments to the SAB for consideration as they proceed with their review.

Member Recognition Pete Kmet

Pete Kmet, on behalf of Ecology and the SAB recognized Julie Wilson for the great contribution she has made to the SAB, Ecology and the State through her involvement as a member of the SAB over the past 4.5 years. Julie concludes her Board membership as of the end of February, 1999.

Rule Update Curtis Dahlgren

- Ecology has received numerous comments on the proposed rule as a result of the recent pre-filing comment period. Ecology will consider all significant comments received prior to filing the rule with the code reviser office.
- Ecology expects that it will need additional technical input from the SAB during the months of February and March.

PAHs

Pete referred the Board to draft language in Section 708 that would allow the use of Toxicity Equivalency Factors (TEFs) for evaluation the toxicity of PAH mixtures. It is proposed that the CalEPA approach be used rather than the USEPA guidelines. This method provides 20 additional PAHs, which are not covered in the EPA approach. This approach is noted on page 85 of the 12-14-98 draft rule. Ecology posed the following questions to the Board:

- Does the rule language discussing the use of the CalEPA approach adequately address previous Board concerns, if not, what more is needed?

Julie noted her concern that the majority of the added 20 PAHs are related to air emissions and would not necessarily be found at contaminated sites. She indicated she didn't object to including a method for addressing these additional compounds if they are found at a site but that this context isn't adequately reflected in the rule. She is concerned that site managers or inexperienced users of the rule may require analysis for these additional PAHs when it is not needed. She is concerned that the draft rule may not provide site managers with enough information to appropriately apply the method in a given situation. Richelle suggested adding examples of situations and asked whether a specific list of PAHs is really necessary. Hank said that he sees a benefit to using the CalEPA approach for TEFs. He suggested adding language to address Julie's concern and for Ecology to add further discussion, if necessary, in the responsiveness summary.

**SAB members agreed that Ecology should consider these suggestions to improving the rule language in support of the CalEPA approach. The Board suggests that the CalEPA approach be used with the added introductory language and discussion of its use in the rule responsiveness summary.

Bioconcentration

Pete reviewed the surface water cleanup-level equation. This equation allows for calculation of how much of a contaminant will accumulate in fish and the subsequent risk to human health. To perform this calculation requires the use of a bioconcentration factor. Pete stated that, for many contaminants, a BCF isn't available. The draft rule proposes allowing the use of the octonal-water-partitioning coefficient to estimate a BCF, in accordance with EPA guidance.

Julie asked whether someone could suggest another approach provided they provide the data to support the request? She thinks an allowance for other approaches would be reasonable. Pete responded affirmatively noting that such a site-specific approach would be subject to Ecology, Department of Health and SAB consideration. Bruce Duncan suggested Ecology consider how this relates to soil toxicity and BAFs, and that Ecology consider using language similar to the

allowance noted for ecorisk in Table 10. Discussion ensued regarding the various methods for calculating BCFs, the difference between a BAF and BCF, and whether the available methods account for metabolism.

Ecology committed to:

- Consider altering the draft language to permit data collection or a literature search to support the use of alternative values.
- Research whether the EPA model addresses metabolism. If not, values may be too stringent.
- Providing the Board with further information on this topic at a future date.

Ecology noted that the intention is not to preclude use of other methods but to provide for a specific approach that can be used.

The SAB said that they need to consider this further before recommending approval to Ecology. They recommend Ecology consider producing a document that would explain this in greater detail and to seek review by others, in addition to seeking Board comment.

Public Comment: Judy Schwartz suggested that this approach is beneficial because it provides a method for deriving a surface water cleanup standard for contaminants where there currently is none. Without a method, some contaminants are simply being ignored. Lynn Gould noted that for PAHs, the available equations appear to over-predict fish concentrations and that this is thought to be due to metabolism preventing the buildup of concentrations within the fish. This would be a problem for TPH. She also said the SAB should tie the surface water risk equation into the discussion.

Method A Tables

Pete noted that the language explains when the Method A tables can be used, per direction provided by the SAB. Pete said that there are three aspects the SAB may want to consider with regard to when Method A can be used:

1. Do the conditions for use of Method A on page 95 adequately address previous Board concerns?
2. Does the Board concur with the proposed changes to the values in the table?
3. Do the footnotes adequately address the Board's concern that the basis for the values be better described?

Hank suggested the Ecology might want to elaborate on the statement "few hazardous substances. Bruce asked whether guidance pertaining to 'few hazardous substances" exists.

Pete oriented the SAB to the three Method A Tables noting the basis for determining values based on pathway. Pete said that a majority of comments related to benzene, TPH and naphthalene.

TPH: Steve Robb talked about the method for determining TPH values for ground water using the TPH surrogates. Richelle suggested that Ecology provide a rationale for derivation of the TPH values. With regard to mineral oil, Richelle suggested that Ecology present the basis or logic for the 1500 value for groundwater. She noted that, without additional rational, the first column of the Table [based on the product completely dissolving in the ground water] doesn't provide a reasonable basis for a standard.

PCBs: Pete noted that the PCB cancer potency factors have changed since the calculations backing up the rule were done. These Method A values need to be re-calculated for both PCBs and mineral oil with PCBs.

Questions/Comments posed by the Board:
1. There needs to be a better explanation of the rational for the proposed TPH standards.
2. Ecology needs to re-check the calculations for diesel and mineral oil.
3. Ecology now has lab data for fresh diesel partitioned into water. That data needs to be reviewed and the calculation checked against that data.

Dermal Craig McCormack, Marcia Bailey, Rob Duff

Craig McCormack, Ecology, invited Robb Duff and Marcia Bailey of EPA to present response to questions raised by the SAB regarding the dermal route of exposure to contaminants in soil and proposed inclusion in the current MTCA rule. Following the EPA presentation, the SAB stated the following:

Julie Wilson restated her concern that while dermal is not new to EPA risk assessments, she is concerned about the impact of applying the dermal pathway to MTCA and cleanup levels since there is less flexibility in determining risk numbers. She states that some flexibility in applying values to dermal, ingestion and vapor should exist. She asked that more thought be given to how the numbers will be applied. She also said that Ecology needs to further consider chemicals with direct dermal impacts – and to think about how to address in the rule the dermal Rfds & CPFs and skin absorption factors.

Hank asked about the appropriateness of using a 10-6 cancer risk for the combined dermal and ingestion pathways since MTCA allows 10-5 for pathways that are additive. Marsha explained that because the dermal and ingestion pathways occur concurrently, she believes it is appropriate to consider them as one pathway. Ecology committed to examining this question further and providing a response to the board

Richelle stated that she lacks expertise in this area and so refrains from comment. A general question was stated with regard to the cumulative impact of uncertainty in the ingestion route and other pathways.

Public Comment: Brad Grimstead expressed concern about adding the dermal pathway to the rule because this could result in a site specific risk assessment coming up with a lower cleanup level or remediation level than with the standard method. Hank noted that while some have had the perception that doing a site specific risk assessment will mean higher cleanup values, this will not always be the case. Joe Johnson stated a concern that the equations do not take into

account the length of time exposure occurs for the dermal pathway. That is, persons that get contaminated dirt on them are likely to wash it off at the end of the day and the proposed equations do not adjust for that.

Hank asked those in attendance that to submit comments to the Board or Ecology [on behalf of the Board] as soon as possible

Soil Pathway – Method A Charles San Juan

Charles distributed a document that outlined the derivation of the soil Method A TPH values.

Richelle expressed the following concerns:

1. With a risk driver of benzene, it seems that not only groundwater but soil should include consideration of the impact of benzene.
2. The process used to derive Table A values needs to be better documented, including any site specific information backing up the decision not to change gasoline
3. Ecology asked, does the Board recommend model results for sites with the lowest concentration of gasoline with paired soil to groundwater? Ecology suggests using a simplistic modeling to account for gasoline values with and without benzene present rather than distinguishing between gasoline and diesel.

Hank summarized board opinion regarding use of Method A for determining TPH values.

1. The method A values should not be based on 100 times groundwater but on an equilibrium equation. The Board does not agree with use of the 100 times based on groundwater modeling.
2. For those compounds where there is a concern by the regulated community that the Method A values derived using the models are too low, Ecology should review available information to see if further refinement is justified.

Ecological Risk Assessment Nigel Blakley

Nigel posed questions to the SAB based on comments received from the public during the recent public comment period. He asked Board members to consider these questions as they review the draft rule.

1. Wildcard. Does the draft rule adequately incorporate the wildcard concept? Nigel described how the rule allows Ecology to use the wildcard approach.
2. Alternative (regional) food web models. Does the Board concur that Ecology should proceed cautiously in allowing the use of the alternative food web models, for example, a bio-regional model? Nigel outlined concerns associated with including alternative regional models in the rule. He drew a distinction between considering a site-specific food web model as currently permitted in the draft rule, and the request that Ecology develop alternative foodweb models to be included in the rule. He stated that the rule currently allows PLPs to conduct site-

specific risk assessments which would allow modification of the default model based on site-specific data.

3. Petroleum eco-risk based concentrations. Ecology has not yet made a final decision on soil eco-standard numbers for petroleum and is requesting comments on scientific data that should be included its deliberations. Are there sources of data that Ecology may not have considered? Data relating to the following are particularly relevant:

- Toxicity of diesel and gasoline to soil macroinvertebrates
- Bioaccumulation of diesel and gasoline compounds by soil macroinvertebrates
- Toxicity of diesel and gasoline to birds and mammals.

Nigel commented that currently available information indicates that the soil eco-standard numbers in the draft rule are protective. He is still evaluating whether there is sufficient information available to justify higher values.

Vapor Pathway Lynn Coleman

Lynn made a brief presentation on the proposed soil to indoor pathway on-ramps. There is currently some data which supports development of specific on-ramps for diesel contamination. PLIA has provided data to Ecology showing that there are not indoor odor complaints unless there are very high concentrations (i.e. free product or soil saturated) of diesel (which is 8% volatile) in the basement or immediately adjacent to the foundation slab. A brief discussion centered on ways to use this information to develop on-ramps for other distillates. Bruce Duncan suggested that the estimate of high concentrations (10,000 mg/kg) and the 8% volatile numbers might be used to estimate situations where volatiles greater than 800 mg/kg should be used as an on-ramp for other distillates.